

### **REMARKS**

Applicants appreciate the detailed examination evidenced by the Final Official Action mailed November 15, 2007 (hereinafter the "Final Official Action"). In response, Applicants have cancelled independent Claims 1 and 11 and have rewritten dependent Claims 7 and 12 to include some of the recitations of independent Claims 1 and 11, respectively. In particular, Claims 7 and 12 now both refer to a specific relationship used to limit the number of rows in the array. Applicants have also provided additional comments herein supporting the patentability of these amended claims. Applicants respectfully submit that no new issues have been raised herein as these amendments focus primarily on supporting the original recitations of dependent Claims 7 and 12. Further, Claims 9, 14, and 16 have been cancelled.

### **The Objections To The Claims Have Been Overcome By Amendment**

Claims 6-9, 11-14, and 16 stand objected to over various recitations therein. (*Final Official Action*, page 2.) In response, Applicants have cancelled claims 6, 9, 11, 14, and 16.

With regard to the objection to Claim 7, Applicants respectfully point out that the relation  $\eta = \sqrt{\frac{R_m * \epsilon (2 + K_{DR})}{R_r (1 - \epsilon)}}$  is defined as a number of rows included in the array, which is limited according to the relation. Applicants respectfully submit that the definition of the term  $\eta =$  is defined by equation 1 and is supported, for example, by page 6, line 9-page 7, line 21 of the specification. Accordingly, the objection to Claim 7 has been overcome by amendment and these remarks.

With regard to the objections to Claims 8 and 13, these recitations are supported by, for example, page 9, lines 15-18 in the specification, which reads:

In general, the diodes are selected so that the data-write currents associated with the different ones of the magnetic memory cells vary from one another less than 15%, ideally 10% or less.

Accordingly, the objection to Claims 8 and 13, have been overcome by these remarks.

With regard to the objection to Claim 12, Applicants point out (similar to that pointed out above in reference to Claim 7) that the determination of  $\eta =$  is supported by the specification, for example, at page 6, line 9-page 7, line 21. Accordingly, the objection to Claim 12 has been overcome by these remarks. In view of the above amendments and

remarks, Applicants respectfully submit that the objections to the claims have been overcome and should be withdrawn.

**The Independent Claims Are Patentable Over Scheuerlein**

Claims 6-16 stand rejected under 35 U.S.C. 102 over U.S. Patent No. 6,130,835 to Scheuerlein ("Scheuerlein"). *Final Office Action, page 2*. Applicants respectfully submit that there is nothing in Scheuerlein, which discloses or suggests how a maximum number of rows can be provided in a square MRAM array based on the inclusion of diodes in selection circuits. In particular, nothing in Scheuerlein discloses or suggests the detailed relationship developed by the present inventors indicating how the parameters, such as the data write current non-uniformity, resistance of the magnetic memory cells, the resistance of rows or columns of magnetic memory cells, as well as reverse bias resistance of the diodes compared to the resistance of the magnetic memory cells, can be related to determine an upper limit for the number of rows included in a square MRAM array. Accordingly, Applicants respectfully request the withdrawal of all rejections and the allowance of all claims for at least the reasons described herein.

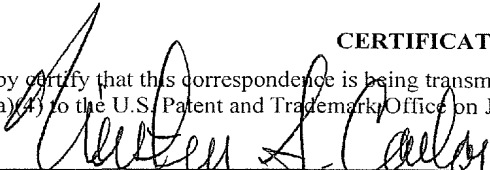
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I hereby certify that this correspondence is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4) to the U.S. Patent and Trademark Office on January 11, 2008.

  
Kirsten S. Carlos